

Disclosure of Commercial Interests

I am Director of Education and consult for Pathway Health, a professional management and consulting organization serving clients in the long-term care and post-acute care industry



Antibiotic Stewardship

NHA's Role and Expectations



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Objectives

Upon completion of this program, attendees should be able to:

1. Understand the new requirements and expectations of an Antibiotic Stewardship Program;
2. Identify key expectations of the NHA for quality outcomes
3. Describe three key leadership strategies for implementation and quality monitoring for successful outcomes

A GREAT Definition

The IDSA (Infectious Diseases Society of America):

- "Antimicrobial stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration. Antimicrobial stewards seek to achieve optimal clinical outcomes related to antimicrobial use, minimize toxicity and other adverse events, reduce the costs of health care for infections, and limit the selection for antimicrobial resistant strains."

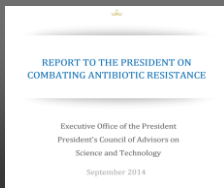
- http://www.idsociety.org/Stewardship_Policy/#sthash.YJuwUaol.dpuf

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Report

- Report to the President on Combating Antibiotic Resistance (September 2014):

- http://www.whitehouse.gov/sites/default/files/microsites/ostp/PCAST/pcast_carb_report_sept2014.pdf



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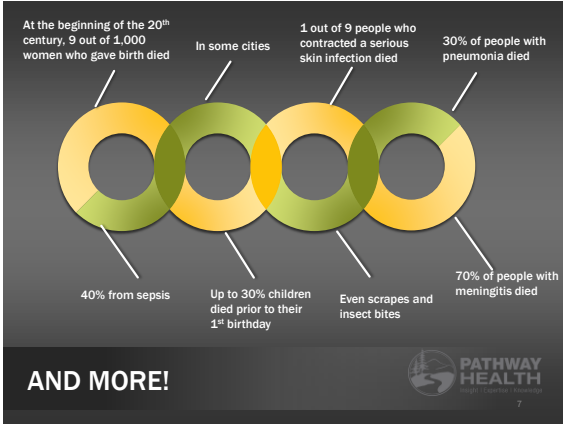
Report

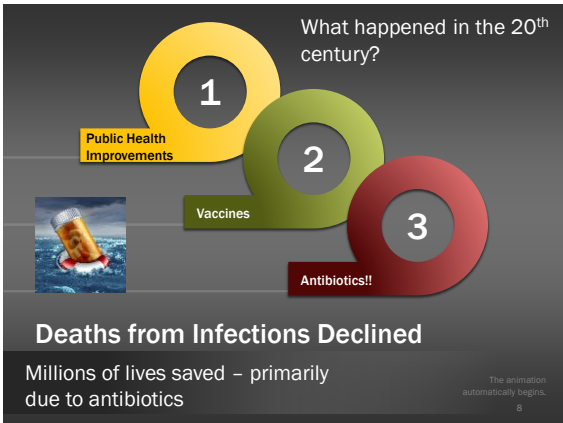
We are losing progress!!!

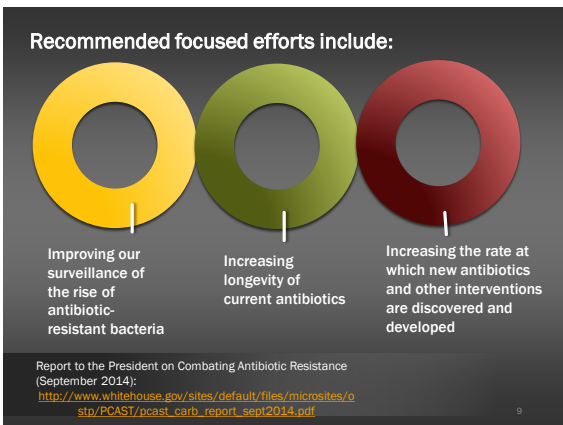
- Antibiotic Resistance "is now occurring at an alarming rate and is outpacing the development of new countermeasures capable of thwarting infections in humans"



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An Additional Report

National Action Plan for Combating Antibiotic-Resistant Bacteria (March 2015):

https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic_resistant_bacteria.pdf



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Report

“Antibiotics have been a critical public health tool since the discovery of penicillin in 1928, saving the lives of millions of people around the world. Today, however, the emergence of drug resistance in bacteria is reversing the miracles of the past eighty years, with drug choices for the treatment of many bacterial infections becoming increasingly limited, expensive, and, in some cases, nonexistent.”

https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic_resistant_bacteria.pdf

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Report

Resistance is due largely to extensive exposure of bacteria to antibiotics.

One of the recommendations for LTC includes Stewardship programs –by the end of 2017, CMS should have Federal regulations (**Conditions of Participation**) in place that will require LTC facilities to develop and implement robust antibiotic stewardship programs that adhere to best practices.

https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic_resistant_bacteria.pdf



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CDC - Centers for Disease Control and Prevention

“The Centers for Disease Control and Prevention (CDC) estimates that drug-resistant bacteria cause two million illnesses and approximately 23,000 deaths each year in the United States alone”



<http://www.cdc.gov/getsmart/week/downloads/antibiotics-arent-always-the-answer-for-parents.pdf>

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Final Rule

Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities

www.federalregister.gov/d/2016-23503



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Final Rule

The facility must establish an infection prevention and control program (IPCP) that must include, at a minimum, the following elements:

- “A system for preventing, identifying, reporting, investigating, and controlling infections and communicable diseases for all residents, staff, volunteers, visitors, and other individuals providing services under a contractual arrangement based upon the facility assessment conducted according to §483.70(e) and following accepted national standards;”

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Final Rule

Written standards, policies and procedures to include:

- A system of surveillance designed to identify possible communicable diseases or infections before they can spread
- When and Whom possible incidents of communicable disease or infections should be reported



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Final Rule

- (Continued) Policies and Procedures
 - Standard and transmission-based precautions
 - Type and duration of isolation
 - The isolation should be least restrictive possible for the resident under the circumstances
 - Circumstances when employees are prohibited to work with a communicable disease or infected skin lesions

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Final Rule

(Continued) Policies and Procedures:

- Hand Hygiene for all staff involved in direct resident contact
- Antibiotic Stewardship Program (Phase 2- November, 2017)
 - Protocols
 - Monitoring
- A system for recording incidents identified under the facility's IPCP and corrective action taken

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Final Rule

Infection Preventionist

- Facility must designate one or more individuals responsible for the IPCP (Infection Prevention and Control Program)
 - Must have primary professional training in nursing, Med tech, microbiology, epidemiology or related field
 - Be qualified by education, training, experience or certification
 - Work at least part-time in the facility
 - Have completed specialized training in Infection Prevention and Control

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Final Rule

- Infection Preventionist must participate/be a member of the facility's QAA Committee and report on the Infection Prevention and Control Program (IPCP) to the committee on a regular basis

*Both the Infection Preventionist and the Infection Preventionist participation on QAA are Phase 3: [November, 2019](#).

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Final Rule

Influenza and pneumococcal immunizations:

- Policies and Procedures
- Prior to offering—must provide education to the resident or resident's representative on benefits and potential side effects
- Influenza: Offer between October 1-March 31 annually unless medically contraindicated or already immunized during time period
- The Resident or resident's representative has the opportunity to refuse

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Final Rule

(Influenza and pneumococcal Immunization-continued)

- Documentation in the medical record must include:
 - Education provided to resident/representative on benefits & potential side effects
 - Administration of vaccine or if not received, the medical contraindication or refusal



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Final Rule

- Other updates to Infection Control
 - Linen: Personnel must handle, store, process and transport linens so as to prevent the spread of infection
 - Annual Review: The facility will conduct an annual review of it's IPCP and update the program as necessary



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Readmission Measure and VBP

Table 2. Ten conditions with the most all-cause, 30-day readmissions for Medicare patients (aged 65 years and older), listed by total number of readmissions, in descending order, 2011

Principal diagnosis for index hospital stay	Number of readmissions		Cost of readmissions		Readmission rate per 100 admissions
	Number of all-cause, 30-day readmissions	Readmissions as a percentage of total Medicare readmissions	Total cost of all-cause, 30-day readmissions (in millions)	Readmission total cost as a percentage of total cost of Medicare readmissions	
Congestive heart failure, unspecified	134,000	7.3	1,747	7.3	24.5
Sepsis (except in labor)	92,900	5.1	1,410	6.9	21.3
Pneumonia (except flu) (specify type when possible)	88,800	4.8	1,148	4.8	17.9
Heart failure (specify type when possible)	77,900	4.2	924	3.8	21.5
Chronic obstructive pulmonary disease (specify type when possible)	69,400	3.8	835	3.5	16.2
Cardiac dysrhythmias	56,547	3.1	621	2.6	16.1
Urinary tract infections	53,000	2.9	603	2.8	21.8
Acute and unspecified renal failure	51,300	2.8	693	2.9	19.8
Acute myocardial infarction	47,200	2.6	742	3.1	19.9
Complication of device, implant, or graft	46,800	2.5	566	2.4	14.5
Stroke (ischemic)	39,100	2.1	531	2.4	15.6
Total	798,100	38.1	8,341	38.8	19.6

* Clinical Classification Software (CCS) code

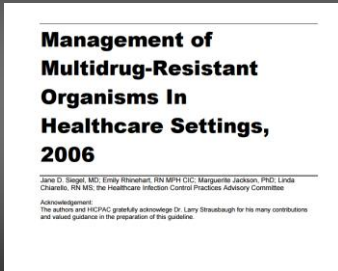
Note: States conditions are currently targeted by the CMS Hospital Readmissions Reduction Program.

Source: Hospital readmission estimates from a readmissions analysis by contract from the Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), State Inpatient Database (SID), 2011

<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb172-Conditions-Readmissions-Payer.pdf>

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Still Current



<http://www.cdc.gov/hicpac/pdf/MDRO/MDROGuideline2006.pdf>

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MDRO's

Multidrug-Resistant Organisms (MDROs):

- Microorganisms (primarily bacteria)
- Resistant to one or more classes of antimicrobial agents
 - (MRSA)Methicillin-resistant Staphylococcus aureus
 - (VRE) Vancomycin-resistant-enterococci
 - (ESBL) Extended spectrum beta-lactamase
 - Acinetobacter baumannii
 - (CRE) Carbapenem-resistant enterobacteriaceae
 - (KPC) Klebsiella pneumoniae carbapenemase
 - Etc.



<http://www.cdc.gov/hicpac/pdf/MDRO/MDROGuideline2006.pdf>

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CDC

C. difficile:

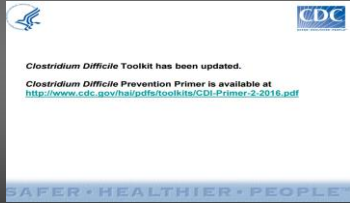
"Most *C. difficile* is not resistant to the antibiotics used to treat it, but antibiotic use puts patients at high risk for deadly diarrhea"

<http://www.cdc.gov/vitalsigns/protect-patients/index.html>

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C-Diff

CDC has developed a Toolkit:



<http://www.cdc.gov/hai/pdfs/toolkits/CDI-Primer-2-2016.pdf>

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Antibiotics

Overused?

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Use of Antibiotics-CDC

- Are overused
- Are misused
- Reactions and Side Effects
- Can only work with infections=bacteria
- Resistance is growing
- Reactions and Side Effects



<http://www.cdc.gov/getsmart/week/downloads/antibiotics.arent.always.the.answer.for.parents.pdf>

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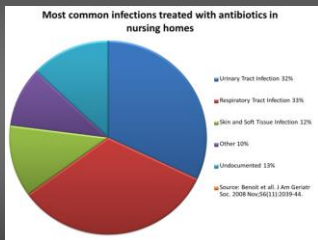
CDC

- “An estimated 2 million illnesses and 23,000 deaths occur each year in the United States due to antibiotic-resistant infections.^{1,2} Overuse and misuse of antibiotics are main drivers of resistance.”

<http://www.cdc.gov/getsmart/week/downloads/antibiotics-arent-always-the-answer-for-parents.pdf>

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CDC



<http://www.cdc.gov/getsmart/healthcare/learn-from-others/factsheets/nursing-homes.html>

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WHO-World Health Organization

**** “Antibiotic resistance is one of the biggest threats to global health today.”**

Recommendations for Health Care Workers:

- Infection prevention with proper hand hygiene and clean instruments and environment
- Keep residents vaccinations up to date
- If you suspect a bacterial infection, test to confirm with bacterial cultures
- Antibiotic administration only when truly necessary
- Antibiotics: Right dose and right duration!

<http://www.who.int/mediacentre/factsheets/antibiotic-resistance/en/>

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Centers for Disease Control and Prevention

<http://www.cdc.gov/>

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Excellent Resource!

#1

Centers for Disease Control and Prevention CDC

<http://www.cdc.gov/>


NHSN-National Healthcare Safety Network
<http://www.cdc.gov/nhsn/LTC/index.html>

Clinical Staff Information, Resident Information, Prevention Tools, Health Department Resources and so much more!

This slide transitions to the next slide when you click. 35

Core Elements for Antibiotic Stewardship for Nursing Homes

- Core Elements for Antibiotic Stewardship
 - Leadership Commitment
 - Accountability
 - Drug Expertise
 - Action
 - Tracking
 - Reporting
 - Education



<http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html>

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Core Elements for Antibiotic Stewardship for Nursing Homes



<http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html>

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CDC



<http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html>

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CDC



<http://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship.pdf>

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Steps to Institute an Antibiotic Stewardship Program



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Antibiotic Stewardship

Antibiotic stewardship involves a system that will lead staff and practitioners to:

- Follow a process to identify the microbe responsible for disease, based on evidence based definitions;
- Selection of the appropriate antibiotic with documentation to indicate the indication for use and rationale as well as to include the appropriate dose, duration and route of medication; and
- To ensure that the antibiotic is discontinued when no longer needed.

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Leadership Commitment



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Leadership Commitment

Efforts necessary to assist the facility with oversight of proper and safe antibiotic use

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Policies and Procedures

- Include policies for criteria for infection
 - Use Evidence-Based Standards of Practice
 - Professionally Accepted Resources

"Surveillance Definitions of Infections in Long-Term Care Facilities: Revisiting the McGeer Criteria"

<http://www.jstor.org/stable/10.1086/667743>

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Policies and Procedures

- Definitions for Criteria (Infections)
 - Fever
 - Respiratory Tract Infections
 - Urinary Tract Infections
 - Skin, Soft Tissue and Mucosal Infections
 - Gastrointestinal Tract Infections

"Surveillance Definitions of Infections in Long-Term Care Facilities: Revisiting the McGeer Criteria"

<http://www.jstor.org/stable/10.1086/667743>

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Policies and Procedures

Other Areas to Consider when drafting P&P's:

- Antibiotic Ordering and Use
 - Drug, Dosage, Duration, etc.
 - Prophylactic Antibiotic Ordering
- Diagnostic Testing and Reporting
- Medical Director Involvement
- Pharmacy Consultant Involvement
- Communication and Education
 - Staff
 - Residents
 - Families



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Job Descriptions

Antibiotic Stewardship Responsibilities should be included in the job descriptions of:

- Infection Preventionist
- Director of Nursing
- Licensed Nurses
- Medical Director
- Pharmacy Consultant



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Communication

- Nurse to Practitioner
- Nurse to DON
- Medical Director
- Families
- Residents
- Pharmacy Consultant



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Culture



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Culture

Culture Change for Quality!

- Facility
- Practitioners
- Nurses
- Families
- Residents



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Accountability



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Accountability

- Medical Director
- DON
- Infection Preventionist
- Consultant Pharmacist
- Lab



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Drug Expertise



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Drug Expertise

- Pharmacist
 - Identify what specific training does the consultant pharmacist (and pharmacists at the contracted pharmacy)
- **You can work with your Pharmacy Consultant on attending a course
- Physicians
 - Enlist Medical Director
- Hospital Partners



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Action



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Action

- Leaders of the organization will determine necessary system updates
 - Policy and Procedural changes
 - Collaboration with Medical Director
 - Collaboration with Pharmacy Consultant
 - Staff Education



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Action

- **Identify ONE area that can improve antibiotic use practices for care improvement—Put into QAPI Process!



Example

- One example is an Antibiotic "Time-Out"
 After culture results obtained (24-48 hours) talk to physician and re-evaluate the therapy
- Still necessary
 - Appropriate (based on lab results)
 - Can even assist in plan (i.e. duration)



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QAPI Action Plan

QAPI ACTION PLAN					
Location: Facility Name	Unit or population	Date:	Team Members		
Concern (Use RFA)					
Root Cause Analysis					
Goals & Objectives (Measurable, compare to concern data)					
Action Items (corresponding to Root Cause Analysis)	Responsible Team Member(s)	Start Date	Estimated Completion Date	Actual Completion Date	Comments

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Tracking



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Tracking and Reporting

In order for organizations to be able to appropriately monitor success of the antibiotic stewardship program, organizations will need to have a solid system to be able to track data. CMS has outlined information on how to track process measures, antibiotic use measures and antibiotic outcome measures as well as costs at: <http://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship.pdf>

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Tracking

The Infection Preventionist will track Antibiotic Use in the facility

Symptoms and Infection Criteria

Diagnostics

Documentation

Follow Up

Medication Dose and Duration

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Auditing

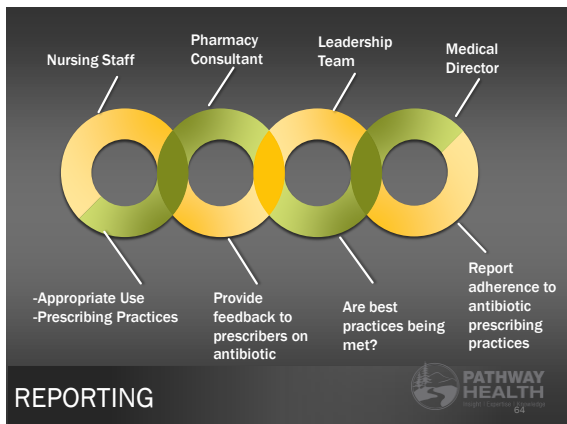
Example: Appropriate Antibiotic Use

- Diagnosis
- Practitioner Order
- Site of Infection
- Start/Stop Date of Medication
- Resident presents with signs/symptoms of infection (using evidence based definitions of infection)
- Organism identified through laboratory testing (i.e. C&S)
- Care Planning

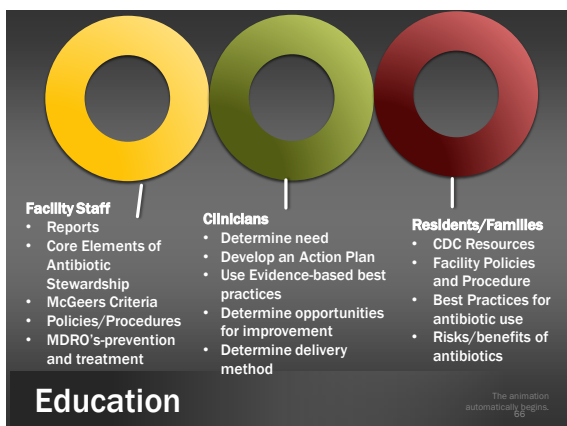
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Reporting

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Resident/Family Education-CDC



<http://www.cdc.gov/longtermcare/pdfs/factsheet-core-elements-what-to-ask.pdf>

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Resident/Family Education-CDC



<http://www.cdc.gov/longtermcare/pdfs/factsheet-core-elements-what-you-need-to-know.pdf>

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CDC Resources

Checklist: Recommended for Infection Preventionist to download and complete



<http://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship-checklist.pdf>

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CDC



<http://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship-checklist.pdf>

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CDC



<http://www.cdc.gov/longtermcare/pdfs/core-elements-antibiotic-stewardship-checklist.pdf>

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NEW! AHRQ-Agency for Healthcare Research and Quality

Nursing Home Antimicrobial
Stewardship Guide

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<http://www.ahrq.gov/nhguide/index.html>

AHRQ-Agency for Healthcare Research and Quality

Nursing Home Antimicrobial Stewardship Guide

- Provides toolkits to help nursing homes optimize the use of antibiotics
 - Start an Antimicrobial Stewardship Program tool kit (guide to establish a new program in a nursing home)
 - The Monitor and Sustain Stewardship Toolkit (guidance and tools for tracking progress toward meeting antimicrobial program goals and provides feedback to prescribing clinicians)

<http://www.ahrq.gov/nhguide/about/index.html>

AHRQ-Agency for Healthcare Research and Quality-continued

Nursing Home Antimicrobial Stewardship Guide

- Toolkits to Determine Whether It is Necessary to Treat a Potential Infection With Antibiotics
 - Suspected UTI SBAR toolkit
 - Communicating and Decisionmaking for Four Infections toolkit
 - Minimum Criteria for Common Infections toolkit

<http://www.ahrq.gov/nhguide/about/index.html>

AHRQ-Agency for Healthcare Research and Quality-continued

Nursing Home Antimicrobial Stewardship Guide

- Toolkits to Help Prescribing Clinicians Choose the Right Antibiotic for Treating an Infection
 - Working with a Lab to Improve Antibiotic Prescribing Toolkit
 - Concise Antibiogram Toolkit
 - Comprehensive Antibiogram Toolkit

<http://www.ahrq.gov/nhguide/about/index.html>

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AHRQ-Agency for Healthcare Research and Quality-continued

Nursing Home Antimicrobial Stewardship Guide

- Toolkit to Education and Engage Residents and Family Members

“This section contains one toolkit that provides guidance and tools for educating residents and their family members about antibiotics and engaging them in health care decisions.”

<http://www.ahrq.gov/nhguide/about/index.html>

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Key Clinical Processes Requiring Revision to Align with the New Requirements



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Key Clinical Processes



1. Ongoing analysis that includes:
 1. Auditing all antibiotic use in the facility
 1. Review nurse assessment information
 2. Root cause analysis: what information was discussed with the physician? (Criteria for Infection?)
 3. Documentation
 2. Ensure that the resident is taking the right antibiotic for the right amount of time
 3. Appropriate discussion with practitioner regarding antibiotic use—may need to involve the Medical Director and the Pharmacy Consultant

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Key Areas to Look at

2. Look at Regulatory Requirements
 - F441: Infection Control
 - F329: Unnecessary Medications
 - F428: Drug Regimen Review



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Key Clinical Processes

3. Review Your ENTIRE Infection Prevention and Control Program!
 - Policies and Procedures
 - Surveillance Activities
 - Tracking and Data Management
 - IDT Involvement
 - Medical Director Involvement
 - Pharmacy Consultant Involvement
 - Lab and X-Ray



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Key Clinical Processes

- Enhance Clinical Skills of Nursing Staff
 - Assessment skills
 - Early identification of changes of condition
 - INTERACT™ Quality Improvement Program
 - Communication
 - Notifications
 - Prompt Action



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Leadership Strategies for Implementation and Quality Monitoring for Successful Outcomes



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Facility Assessment

- Administrative Measures
- Risk Assessment
- Education
- Antibiotic Use Evaluation and Antibiotic Stewardship
- Surveillance
- Hand Hygiene
- Standard and Transmission Based Precautions
- Environmental Measures



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Leadership Strategies

- Ensure all policies and procedures are updated to include new requirements, recommendations and evidence-based standards of practice
- Meet with Medical Director to discuss changes necessary and include in policy and procedure changes as well
- Include the Pharmacy Consultant in the process of system update and implementation



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Leadership Strategies

- Ensure a solid, preadmission process to identify potential resident's with MDRO's and/or antibiotic use
- Include antibiotic stewardship in your QAPI process and report all status updates and practice outcomes to the quarterly QA Committee meeting



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Leadership Strategies

- Ensure ongoing communication with the Infection Preventionist
 - Daily stand-up meeting
 - Direct contact with concerns
 - During Quality Assurance Committee meetings



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Leadership Strategies

- Stay up to date with the most current recommendations, guidelines, evidence based standards of practice and regulatory requirements.



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Key Resource Locations

CDC: The Core Elements of Antibiotic Stewardship for Nursing Homes



<http://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html>

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Resources and References

- U.S. Department of Health & Human Services: AHRQ: Nursing Home Antimicrobial Stewardship Guide
- <http://www.ahrq.gov/nhguide/index.html>

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References and Resources

- CMS State Operations Manual, Appendix PP – Guidance to Surveyors for Long Term Care Facilities: https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf

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References and Resources

Medicare and Medicaid Programs; Reform of Requirements for Long-Term Care Facilities

- <https://www.federalregister.gov/documents/2016/10/04/2016-23503/medicare-and-medicare-programs-reform-of-requirements-for-long-term-care-facilities>

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References and Resources

Stone, N.D., Ashraf, M.S., Calder, J., Cmich, C.J., Crossley, K., Drinka, P.J.....Bradley, S.F. (2012) **Surveillance Definitions of Infections in the Long-Term Care Facilities: Revisiting the McGeer Criteria.** Retrieved from: <http://www.jstor.org/stable/10.1086/667743>

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References and Resources

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings

<http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf>

Management of Multidrug - Resistant Organisms In Healthcare Settings, 2006

<http://www.cdc.gov/hicpac/pdf/MDRO/MDROGuideline2006.pdf>

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References and Resources

Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship

Timothy H. Dellit, Robert C. Owens, John E. McGowan, Jr., Dale N. Gerding, Robert A. Weinstein, John P. Burke, W. Charles Huskins, David L. Paterson, Neil O. Fishman, Christopher F. Carpenter, P. J. Brennan, Marianne Billeter, and Thomas M. Hooton

<http://cid.oxfordjournals.org/content/44/2/159.full.pdf+html>

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Advancing Excellence

Infections

- Information
- Helpful Websites
- Infections Tracking Tool
- Assessment Checklists
- Fact Sheets
- Ability to submit data and view your trend graphs for infections

<https://www.nhqualitycampaign.org/goalDetail.aspx?g=inf>

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Resources

CDC: Antibiotic Stewardship Statement for Antibiotic Guidelines – Recommendations of the Healthcare Infection Control Practices Advisory Committee

<http://www.cdc.gov/hicpac/Pubs/Antibiotic-Stewardship-Statement.html>

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Questions



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Thank You For Attending Today's Presentation!



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